

REMARKS/ARGUMENTS

Applicant responds herein to the non-final Office Action mailed March 23, 2007, in the above-identified application.

Claims 1-30 are the claims currently pending in the present application.

Independent claims 1, 6, 11, 16, 21 and 26 are amended to clarify features recited thereby. These amendments to the claims are fully supported by applicant's disclosure, see for example, page 11, lines 1-25 and page 12, lines 1-7.

Rejection of Claims 1-30 under 35 U.S.C. § 103

Claims 1-30 are rejected under 35 U.S.C. § 103 as being obvious based on *Koji*, Japan Patent Publication No. 11-268827 in view of *Shinbara*, U.S. Patent No. 5,485,644 and *Takano*, U.S. Patent No. 6,828,235. Reconsideration of this rejection is respectfully requested.

Independent claims 1, 6, 11, 16, 21, and 26 have been amended and are further distinguished. As amended, each of independent claims 1, 6, 11, 16, 21, and 26 requires, *inter alia*, a "first processing chamber including a liquid chemical processing part for performing liquid chemical process on substrates by dipping substrates into a liquid chemical stored in liquid chemical baths" and "a second processing chamber including a pure water processing part for performing pure water process on substrates by dipping substrates into pure water stored in rinse baths, and a dry processing part for performing dry process on substrates drawn up from said rinse baths." Additionally, according to an embodiment of the present invention, the atmospheres in the first and second processing chambers can be isolated from each other. That is, the atmospheres in the first processing chamber for performing the liquid chemical process and the second processing chamber for performing rinse and dry process are isolated from each other in the substrate processing apparatus according to the present invention.

Further, as recited by the claims, a third opening as well as a third shutter member is provided between the first and second processing chambers. Thus, according to the substrate processing apparatus of the present invention, substrates can be carried between the first and second processing chambers without being transported to the outside, and the atmospheres in the first and second processing chambers can be isolated from each other by blocking the third

opening with the third shutter member when substrates are not carried. This prevents the liquid chemical in the first processing chamber from being exposed to water vapor or drying gas, and substrates being subjected to rinse and dry processing from being exposed to the components of the liquid chemical.

Further, as recited by the claims, the atmospheres in the first and second processing chambers are continuously replaced by an inert gas in the substrate processing apparatus of the present invention. Thus, liquid chemical components generated in the first processing chamber, and water vapor and unnecessary drying gas, generated in the second processing chamber, are immediately replaced by an inert gas. This prevents the liquid chemical components, and water vapor and drying gas from being transferred between the first and second processing chambers when the third shutter opens.

Koji discloses a substrate processing apparatus wherein a liquid chemical bath 12 and a rinse bath 13 are contained inside of a single external member 21 (e.g., see, *Koji*, Fig. 2). The chemical bath 12 and the rinse bath 13 are not isolated from each other as evidenced by the openable/closable door 27 which cannot be positioned in an isolating state. Similarly, a chemical bath 14 and a rinse bath 15 are not isolated from each other. In other words, according to the substrate processing apparatus taught by *Koji*, the atmosphere in an area used for performing a liquid chemical process and the atmosphere in an area used for performing a rinse and drying process are not isolated from each other (e.g., see, *Koji*, FIG. 2).

Moreover, *Koji* fails to disclose the third opening and the third shutter member, as acknowledged by the Examiner (e.g., see, Office Action, page 3).

Shinbara discloses a back surface cleaning unit 2, a front surface cleaning unit 3, and a rinsing and drying unit 4. Each of the back surface cleaning unit 2, the front surface cleaning unit 3, and the rinsing and drying unit 4, however, are units for supplying deionized water to a substrate (e.g., see, *Shinbara*, Abstract, lines 5-12; col. 3, lines 20-21) and do not teach or suggest a unit for performing a liquid chemical process on substrates, as recited by the claims of the present invention. Further, as *Shinbara* does not teach or suggest a unit for performing a liquid chemical process on substrates, *Shinbara* cannot disclose that the atmosphere in the area used for performing the liquid chemical process and the atmosphere in the area used for

performing a rinse process are isolated from each other. In other words, *Shinbara* fails to teach or suggest “said third shutter member being effective in a closed state thereof to isolate the atmosphere within said first processing chamber from the atmosphere within said second processing chamber,” as recited by the claims of the present invention..

Further, according to an embodiment of the present invention, the third shutter is provided to prevent liquid chemical components contained in the chemical processing unit from entering the next processing chamber. In contrast, *Shinbara* does not disclose a unit for performing liquid chemical processing. Therefore, no motivation can be found to apply the shutter disclosed by *Shinbara* to the third shutter of the present invention. Accordingly, there can be no motivation to provide a third shutter member for the third opening.

Additionally, *Takano* does not teach or suggest that the atmosphere in the area for performing the liquid chemical process and the atmosphere in the area for performing a rinse and drying process are isolated from each other. Further, *Takano* does not teach or suggest structures corresponding to the third opening and the third shutter, as recited by the claims of the present invention.

As stated above, none of the cited references teach or suggest that the atmospheres in the areas for performing chemical liquid process and rinse and dry process are isolated from each other. Moreover, no motivation can be found in the cited references to provide a third shutter between the first processing chamber for performing chemical liquid process and the second processing chamber for performing a rinse and drying process.

For at least the above-stated reasons, claims 1, 6, 11, 16, 21, and 26 are neither anticipated by nor rendered obvious over *Koji*, *Shinbara*, or *Takano*, either alone or the combination thereof. Reconsideration is requested.

Claims 2-5 depend from independent claim 1, claims 7-10 depend from independent claim 6, claims 12-15 depend from independent claim 11, claims 17-20 depend from independent claim 16, claims 22-25 depend from independent claim 21, and claims 27-30 depend from independent claim 26. Therefore, claims 2-5, 7-10, 12-15, 17-20, 22-25, and 27-30 are patentably distinguishable over the cited art for at least the same reasons as their base claims.

Conclusion

In view of the foregoing discussion, withdrawal of the rejection and allowance of the application are respectfully requested.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

Should the Examiner have any questions regarding the present Amendment, or regarding the application generally, the Examiner is invited to telephone the undersigned attorney at the below-provided telephone number.

THIS CORRESPONDENCE IS BEING
SUBMITTED ELECTRONICALLY
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Respectfully submitted,



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